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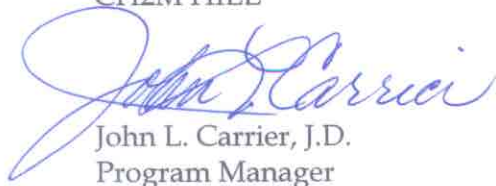
RE: Preliminary Staff Assessment Comments, Set 4  
Cosumnes Power Plant (01-AFC-19)

On behalf of the Sacramento Municipal Utility District, please find attached 12 copies and one original of PSA Comments, Set 4, in response to staff's Preliminary Staff Assessment dated August 2002. These comments solely address Transmission System Engineering.

Please call me if you have any questions.

Sincerely,

CH2M HILL



John L. Carrier, J.D.  
Program Manager

c: Colin Taylor/SMUD  
Kevin Hudson/SMUD  
Steve Cohn/SMUD

# **Sacramento Municipal Utility District**

## **Comments on the Cosumnes Power Plant**

### **Preliminary Staff Assessment, Set 4**

Provided below, for CEC staff's consideration, is Set 4 of SMUD'S comments on the Preliminary Staff Assessment (PSA) for the Cosumnes Power Plant (CPP) project (01-AFC-19). These comments pertain solely to Transmission System Engineering.

## **Introduction**

For a utility that owns and operates generation and transmission, the benefits of system additions and modifications fall into two primary categories: reliability and economics. Sacramento Municipal Utility District (SMUD) is required to, and does construct and operate its system according to the policies and standards of the Western Electricity Coordinating Council (WECC) and the North American Electric Reliability Council (NERC). In the interests of its customers, who are also its owners, SMUD is also required to maintain reliable, adequate and economical energy resources and transmission delivery systems. Construction of the Cosumnes Power Plant (CPP) is a critical component toward satisfying those regulatory and customer demands.

## **Heavy Summer Conditions**

One reason SMUD is constructing CPP to satisfy real reliability concerns. SMUD is presently dependent on substantial imports during heavy load periods and is fast approaching the practical limit to those imports. SMUD plans to construct the 500 MW CPP generation project in 2005 and add another 500 MW about 2 years later. SMUD projects its peak load to be about 3,138 MW in the year 2005. Even if SMUD were able to construct all 1000 MW at CPP by the year 2005, it would have only 2,249 MW of internal generation capacity. After losses and reserves, SMUD would still have to import more than 1000 MW. Any impacts on the surrounding system from adding the CPP would be the result of reducing area imports, certainly not the result of imposing exports on our neighbors. Fortunately, even the addition of the full 1000 MW at CPP during anticipated 2005 heavy load conditions will result in no significant negative impacts on the surrounding systems but will provide additional load serving and voltage support benefits, both to the SMUD system and to adjacent systems.

## **Light Spring Conditions**

Only one contingency, a highly unlikely simultaneous double-line outage, was found to have a potential impact on the transmission systems surrounding SMUD during the extreme light spring conditions studied. Even that potential impact is only a very minor economic consideration rather than a system reliability concern.

The spring case studied is an extreme test of worst-case impacts of additional generation in the Sacramento area, with light loads, CPP generation at its full 1000 MW capacity, high generation levels at the remaining SMUD generators, Sutter Power Plant at 97% of its full

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capacity, high imports from the Pacific Northwest and high exports to southern California, all combining to potentially impose heavy north to south flows over some northern California system transmission lines south of SMUD's area under specific contingencies. Even under these adverse conditions, the only contingency discovered that causes a negative impact of any significance is the simultaneous outage of the two Rancho Seco to Bellota 230 kV transmission lines that are on separate towers, a highly unlikely occurrence. Under these conditions and for this event, the potential impacts to the neighboring systems are limited to overloads on the Western Area Power Administration's (Western) 230 kV transmission lines from Hurley to Tracy and an apparent, but erroneous, overload on the Modesto Irrigation District (MID) 230 kV line between Westley and Tracy.

The apparent 27.8% overload on the Westley to Tracy line was based on an erroneous rating of 353 MVA in our power flow modeling, but applying the correct rating of 650 MVA reduces the indicated loading to less than 63% of its normal rating. Alleviating the overloads on the Hurley to Tracy lines would require only about a 200 MW total SMUD generation reduction during these extreme conditions. Because of the light system loads and high generation levels assumed to produce this extreme case, SMUD would have significant flexibility in selecting the generation to be limited, and this limitation would introduce no operational difficulties or reliability concerns. This type of action is routinely performed by SMUD's operations center on an hour-to-hour and day-to-day basis to balance load, imports and local generation.

It would be prohibitively expensive to design transmission systems to accommodate every conceivable generation schedule and none of the utilities in California do so, nor is it required by system reliability criteria. SMUD regularly participates in the Sacramento Valley Study Group (SVSG) with surrounding utilities and independent power producers (including the California ISO, PG&E, Western, Roseville, Northern California Power Agency, and any other interested entities) to develop near-term operating procedures to avoid or mitigate potential adverse system impacts. This is a common, effective, cost-efficient effort used throughout the country to balance loads and resources. Basically, intensive studies are performed to identify operating conditions that could result in any potential criteria violations, and then just not operating there.

As an alternative to total generation reduction during these specific conditions, SMUD could elect to implement a remedial action scheme, triggered by a simultaneous outage of both Rancho Seco to Bellota lines, to automatically reduce generation and prevent the potential overload of the Hurley to Tracy lines. Because area imports are limited, SMUD presently has a remedial action scheme during heavy load periods that would automatically reduce load upon loss of both Rancho Seco to Bellota lines to avoid the potential of voltage collapse in the local area. Construction of the Cosumnes Power Plant will provide substantial additional voltage support, significantly reduce the critical need for area imports, and eliminate the need for that remedial action scheme. Because of the general

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availability of excess generation during the extreme spring conditions identified, the relatively small amount of generation reduction required, and the fact that SMUD's availability of excess generation would be reduced over a fairly short time, it would not seem likely that an automatic remedial action scheme to reduce generation during these low load extreme periods would be economically justifiable or even needed. It is far more likely that SMUD would simply elect the minor inconvenience of avoiding that unusually high generation level during those particular extreme conditions.

## **Conclusion**

Adding a 1000 MW CPP project to the existing system in the year 2005 introduces no significant problems during heavy load periods and introduces only a highly unlikely potential problem easily accommodated through standard operating procedures during light spring extreme conditions. The most significant change in the transmission system surrounding SMUD, over the few years after 2005, is anticipated to be an increase in system loads, which would result in the CPP being a more significant benefit and reduce any potential impact, even during the extreme spring conditions studied. As the local load increases, less power from SMUD's generation resources would be available to flow out of the SMUD system during light load periods, further reducing any potential to operate in a manner that could result in a reliability criteria violation. Thus, the system impact studies performed for the CPP to date should be adequate for the entire 1000 MW project. SMUD's understanding is that should other developers propose additional generation projects, those projects would be required by the CEC to analyze the system and provide mitigation for reliability and environmental impacts of their projects. Since other projects such as the Roseville Energy Facility, the Rio Linda/Elverta project and the Reliant Energy Colusa Project have withdrawn or are in suspension, the Cosumnes project is presently the only local project that potentially could cause system reliability violations in the area. SMUD believes that, from a CEC perspective, the Cosumnes project should be considered at this point to be the only project in the CEC's "Generation Queue" for the purpose of licensing CPP.